

Notice of Allowability

Application No.

09/545,455

Examiner

Eduardo Garcia-Otero

Applicant(s)

GARCIA ET AL.

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/17/04.
2. ☒ The allowed claim(s) is/are 1-7, 8-14, and 16-20.
3. ☒ The drawings filed on 4/7/00 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☒ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892) ✓
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) ✓
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

[Signature]
KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

EXAMINER'S AMENDMENT and REASONS FOR ALLOWANCE

Introduction

1. Title is: UTILITY STATION AUTOMATED DESIGN SYSTEM AND METHOD
2. First named inventor is: GARCIA
3. Claims 1-7, 9-14, and 16-20 are allowed.
4. Priority is claimed to provisional application filed 4/9/1999.
5. A personal interview was held 3/31/2004.
6. Applicant's Amendment and Declaration were received 5/17/2004.
7. Examiner's Amendment based on email from Applicant was received 8/12/2004, incorporating changes requested by Examiner.

Index of Prior Art

8. **Shumaker** refers to "AutoCAD and its applications Advanced Release 14", by Terence M. Shumaker et. al., The Goodheart-Willcox Company, Inc., May 1998.
9. **Young** refers to US Patent 6,038,567.
10. **Artificial Intelligence** refers to Artificial Intelligence (Understanding Computers series), by Time-Life Books, 1986, ISBN 0-8094-5675-3, pages 36-43.

Remarks

11. ALL PRIOR REJECTIONS OVERCOME. Applicant's amendments and assertions overcome all of the prior rejections under 35 USC 112 and under 35 USC 103.
12. INTERPRETATION. During the interview of 3/31/2004, Applicant demonstrated a commercial version of the claimed invention. Said demonstration clarified Applicant's intent, and also introduced secondary considerations which are supported by Declaration received 5/17/2004.
13. Specifically, Applicant's intent extends far beyond merely providing templates, and actually is an expert system for designing electrical power utility station facility. The expert system includes defining possible future selections of components and parameters based upon the prior selected components and parameters. This type of expert "defining" efficiently guides the user through the

complex design process, and also blocks (masks, or disables) the user from selecting additional components and parameters which would not be appropriate. See FIG 10A and 10B. The claims have been amended to reflect said intent.

14. However, the claims as of Applicant's Amendment received 5/17/2004 retained some problems regarding scope of enablement. Specifically, the claims of 5/17/2004 stated "designing a facility", but only electrical power utility stations are enabled. The Examiner suggested changes in scope to the Applicant by telephone, and the Applicant's replied by email received 8/12/04, and said email is the used as an Examiner's Amendment.

15. SECONDARY CONSIDERATIONS, DECLARATION. Applicant's Declaration received 5/17/2004 strongly supports the secondary consideration of commercial success, and includes a signed licensing agreement to General Electric. Thus, the Examiner gives substantial weight to Applicant's secondary considerations.

Knowledge based expert systems: brief review

16. It appears useful to review three examples of knowledge based expert systems, as well as the relevant cases and burdens.

17. DEFINITION. The claimed invention appears to be a relatively low-level expert system. An "expert system" is defined by Microsoft Computer Dictionary as "An application program that makes decisions or solves problems in a particular field, such as finance or medicine, by using knowledge and analytical rules defined by experts in the field. It uses two components, a knowledge base and an inference engine, to form conclusions... See also artificial intelligence, inference engine, intelligent database, knowledge base."

18. THREE EXAMPLES. The complexity of early expert systems is discussed by Time-Life Artificial Intelligence (copyright 1986) at page 40 "With considerable help and encouragement from Feigenbaum and his colleague Bruce Buchanan, another Stanford research scientist, Shortliffe devised an expert system dubbed MYCIN. Armed with some 500 if-then rules for diagnosing meningitis and blood infections and recommending antibiotic therapies".

19. A second expert system is discussed at page 41, "CADUCEUS-which was named for the traditional winged-staff-and-serpent symbol of physicians-began in the early 1970s. Its goal is to encompass the essential diagnostic knowledge of some 700 diseases. With Jack Meyers serving as an important source of the system's expertise, it is perhaps unsurprising that CADUCEUS acquired the nickname Jack-in-the-Box.... Systems such as CADUCEUS are severely limited by the size of their knowledge bases."
20. A third expert system is discussed at page 41, "Aldo Cimino... expert in maintaining the complex sterilizers, or "cookers," used for killing bacteria in canned soup... spent about seven months with Michael Smith, a so called knowledge engineer-a computer scientist who tries to reduce complex subjects to the if-then format that can be processed by an expert system ... more than 150 rules of thumb to aid the operators of Cambell's sterilizers". Note that two experts spent seven months (or 14 man-months, or more than 1 man-year) to generate 150 if-then rules.
21. LEGAL PRECEDENT. For the record, note two useful cases regarding enablement. *White Consolidated Industries, Inc. v. Vega Servo-Control Inc.* (CAFC) 218 USPQ 961, 963 (7/25/83) addresses software enablement and states "The amount of required experimentation, however, must be reasonable" and "in this case that development of a single pass language translator would require from 1-1/2 to 2 manyears of effort, a clearly unreasonable requirement".
22. Also note that *In re Wands* (CA FC) 8 USPQ2d 1400, 1404 (9/30/1998) provides an 8 factor test for determining undue experimentation: "Factors to be considered in determining whether a disclosure would require undue experimentation...includes (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims".

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23. MPEP BURDENS. Examiner bears “the initial burden to establish a reasonable basis to question the enablement” according to MPEP 2164.04. The burden then shifts to the Applicant to “present persuasive arguments, supported by suitable proofs where necessary”, see MPEP § 2164.05. The standard for the Applicant’s arguments is “convincing to one skilled in the art”, see MPEP § 2164.05.

Examiner’s Amendment

24. The Examiner hereby amends the claims according to said email, which is attached. Note that all the independent claims 1, 10, and 16 state “**electrical power utility station facility**” in the preambles (narrowing the scope of the claims). Also, the dependent claims 8, 15, and 21 have been deleted.

25. See attached email, per MPEP 13.02.04:

As an alternative, the examiner’s amendment utilizing paragraph/claim replacement can be created by the examiner with authorization from the applicant. The examiner’s amendment can also be created from a facsimile transmission or e-mailed amendment received by the examiner and referenced in the examiner’s amendment and attached thereto. Any subject matter, in clean version form (containing no brackets or underlining), to be added to the specification/claims should be set forth separately by applicant in the e-mail or facsimile submission apart from the remainder of the submission. A clean version of a paragraph/claim, or portion of a paragraph/claim, submitted by applicant in a fax or e-mail, should be printed and attached to the examiner’s amendment and may be relied on as part of the examiner’s amendment. The examiner should mark “requested” on the entire attachment to indicate that the fax or e-mail was requested by the examiner, so as to not lead to a reduction in patent term adjustment (37 CFR 1.704(c)(8)). As the attachment is made part of the examiner’s amendment, it does not get a separate PALM code and will not trigger any reduction in patent term adjustment. A paper copy of the entire e-mail or facsimile submission should be entered in the application file. Examiners are not required to electronically save any e-mails once any e-mails or attachments thereto are printed and become part of an application file record. The e-mail practice that is an exception for examiner’s amendments is restricted to e-mails to the examiner from the applicant and should not be generated by the examiner to the applicant unless such e-mails are in compliance with all of the requirements set out in MPEP § 502.03.

Reasons for Allowance

26. Applicant’s claims an expert system for designing an “**electrical power utility station facility**”. The expert system includes automatically defining possible future selections of components and parameters based upon the prior selected components and parameters. This type of expert “**automatically defining**” efficiently guides the user through the complex design process, and also blocks

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(masks, or disables) the user from selecting additional components and parameters which would not be appropriate. See FIG 10A and 10B.

27. None of the prior art of record discloses or enables the claimed expert system for automatically designing electrical power utility station facilities. The above three examples of expert systems indicate the substantial amount of experimentation required to enable expert systems. Applicant's application and provisional application provide adequate enablement.
28. Note that *In re Venner* does not apply, because Applicant provides detailed enablement, for example see FIG 10A and 10B. (*In re Venner*, 262 F.2d 91, 95, 120 USPQ 192, 194 (CCPA 1958) states "it is well settled that it is not "invention" to broadly provide a mechanical or automatic means to replace manual activity which has accomplished the same result." Additionally, MPEP 2144.04(III) states "broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art.")
29. There is prior art regarding certain narrow aspects of automatic design. For example, US Patent 5,500,802 by Normann teaches automatically designing and editing a distribution system for a building. Also, Young discloses using "wizards" and predefined layouts, and Shumaker discloses customized templates. However, none of the prior art teaches or enables automatically designing electrical power utility station facilities.
30. Additionally, Applicant's Declaration received 5/17/2004 strongly supports the secondary consideration of commercial success, and includes a signed licensing agreement to General Electric. The Examiner gives substantial weight to Applicant's secondary considerations.
31. Thus, claims 1-7, 9-14, and 16-20 are allowed.

Conclusion

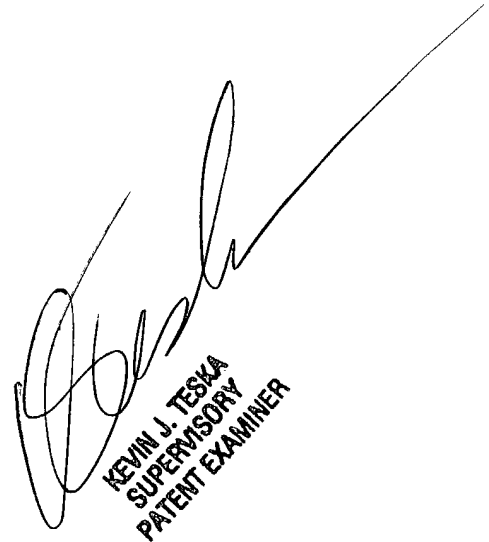
32. Claims 1-7, 9-14, and 16-20 are allowed.
33. The Examiner's Amendment is attached, and provides clean claims, per MPEP 13.02.04.

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Communication

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Garcia-Otero whose telephone number is 703-305-0857. The examiner can normally be reached on Tuesday through Friday from 9:00 AM to 8:00 PM. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for this group is 703-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.

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